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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,612	07/31/2002	Tom-Chin Chang	9154-US-PA	6857

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EXAMINER	
SETH, MANAV	
ART UNIT	**PAPER NUMBER**
2624	

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11/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/064,612	CHANG, TOM-CHIN	
	Examiner	Art Unit	
	Manav Seth	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-11 and 28-33* is/are allowed.

6)☒ Claim(s) *12 and 15-27* is/are rejected.

7)☒ Claim(s) *13 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.1 14

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1 .17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 09, 2007 has been entered.

Response to Amendment

2. Applicant's amendment filed on October 09, 2007 has been considered and entered in full.

3. Applicant's arguments with respect to respective amended claims have been considered but are moot in view of the rejection(s) made below, in view of the further consideration of the amended claims.

Claim Objections

4. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not). Also, the succeeding (large number) claims should depend on the preceding (small number) claims.

Here in the instant application, preceding (small number) claims 2-11 depend on a succeeding (large number) claim 33. Proper correction to the numbering of claims is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 23-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The instant application as originally filed had claims 1 through 11 directed towards a method. Claims 23-27 were later on added by amendment and these claims are directed to a storage medium having stored thereon instructions. The specification has no written description regarding this storage medium, what this storage medium is? The addition of these claims directed to storage medium present new subject matter not supported by the written description. Examiner for further clarification hereby requests the applicant to provide the paragraph or page number citing the location of this subject matter in the specification.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the

subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 12-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuka, U.S. Patent No. 5,262,873.

Claim 12 recites "An apparatus, comprising: means for obtaining a first correction digital signal, said means for obtaining a first correction digital signal configured to scan a first correction document during black correction, to extract only a plurality of last bits of the first correction digital signal; and means for obtaining a second correction digital signal by scanning a second correction document during white correction, said means for obtaining a second correction digital signal configured to extract only a plurality of first bits of the second correction digital signal". Ishizuka, as a prior art, starts with teachings of a correcting device in which a white correction digital signal is obtained by reflecting a light from light source by a white reference (e.g. document) provided in the scanner (col. 3, lines 65-68 through col. 4, lines 1-3). Ishizuka further discloses **"Since the scanner is generally characterized by the white signals** between adjacent pixels or within a range of a small number of pixels being similar to each other, the difference between the adjacent pixels is, for example, between 1 and several tens of percentage points of the full scale. Therefore, the value representing the difference is small with respect to the number of bits of the output of the A/D converter 101, and the number of bits required for the memory 103 can thus be reduced, saving the capacity of the memory 103" (col. 4, lines 43-52). Ishizuka further discloses **"The output of the A/D converter 101 other than one to a few bits of the minimum resolution (LSB) side of the output of the A/D converter 101 is input to the subtracter 105, and the result of the subtraction is stored in the memory 103" (col. 5, lines 22-30)** where the other bits other than LSB (a plurality of last bits) **are MSB (or a plurality of first bits)**. From the

above disclosure by Ishizuka it is clear that after white digital correction signal is obtained, the number of bits representing the white digital correction signal are reduced with respect to the small memory size and only a plurality of first bits (MSBs) of white correction digital signal are extracted.

Ishizuka further teaches a correcting device which obtains a dark (black) correction digital signal for each of the bits of the scanner by reading a black reference (document) or by turning off a light source and then by performing reading by the scanner under the darkest condition (col. 6, lines 56-61). Ishizuka further teaches "since the dark signal has a number of bits smaller than that of the effective signal, the number of bits of the quantized value of the dark signal is less than N. Since a value having a number of bits smaller than N is stored in the memory, the capacity of the memory can be saved (col. 7, lines 53-58). Ishizuka does not explicitly or specifically teach extracting the plurality of last bits of the black correction signal but does teach using fewer bits of the black correction signal, thus using the reduced memory size.

As discussed before, Ishizuka clearly teaches the white correction process by disclosing **"Since the scanner is generally characterized by the white signals** between adjacent pixels or within a range of a small number of pixels being similar to each other, the difference between the adjacent pixels is, for example, between 1 and several tens of percentage points of the full scale. Therefore, the value representing the difference is small with respect to the number of bits of the output of the A/D converter 101, and the number of bits required for the memory 103 can thus be reduced, saving the capacity of the memory 103" (col. 4, lines 43-52) and further discloses extracting plurality of first bits (MSB) to represent the white correction value and thus leaving behind LSB of minimum resolution (or contrast) **(col. 5, lines 22-26). Similarly,** Ishizuka

performs black correction and apparently black being very small in value, all the pixels can be represented by the smaller number of bits. Further emphasizing, it is a well-known technical fact, that black occupies one end and white occupies another end of the grayscale range. Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention was made in view of this well-known technical fact such that if MSB or plurality of first bits of white correction signals are selected for white image correction, as done by Ishizuka, LSB or plurality of last bits of black correction will be selected for black image correction, as black occupies one end and white occupies another end of the grayscale contrast range and Ishizuka does teach **the scanner (or image extracting device) is generally characterized by the white signals** as discussed before, whereas black correction is done when there is no light source or using black reference, thus the black correction signal being too small, and further white correction extracts high resolution MSB side bits leaving behind low resolution LSB bits and since black correction represents very small value, the selection of bits from the LSB minimum resolution side is obvious.

Ishizuka further discloses that in order to reduce memory size, a common memory is used by both a white signal correcting device and a dark (black) signal correcting device, and these two correcting devices are formed as one unit and figure 9 shows that one unit (col. 8, lines 35-44). Ishizuka further discloses the method performed by this single unit where, (a) **first**, a black correction digital signal is obtained (col. 8, lines 45-47) and the black correction digital signal (a plurality of bits) is stored in the four leftmost bits of the flip-flop 303 (col. 8, lines 55-57), and (b) **second**, a white correction digital signal is obtained (col. 8, lines 58-60) and the white correction digital signal (a plurality of bits) is stored in the four rightmost bits of the flip-flop 303 (col. 8, lines 63-66).

Claim 15 recites "the apparatus according to claim 12, further comprising means for storing the extracted first bits of the second correction digital signal in a memory". As discussed in the rejection of claim 12, the extracted bits of the both dark and white correction digital signals are stored in memory. Therefore, Claim 15 has been similarly analyzed and rejected as per claim 12.

Claim 16 recites "the apparatus according to claim 15, wherein the memory comprises a random access memory". As from the definition, RAM or random access memory is a memory that can be written and read. Memory, 303, has been discussed in the rejection of claim 12. Therefore, claim 16 has been similarly analyzed and rejected as per claims 15 and 12.

Regarding claims 17-19, the subject matter of these claims have been discussed in the rejection of claim 12, therefore these claims have been similarly analyzed and rejected as per claim 12.

Claim 20 recites "the apparatus according to claim 19, wherein the image extraction device comprises a charge-coupled device". Ishizuka discloses a image sensor, 53, as an image extraction device in figure 9 and CCDs (charge-coupled devices) are well known to be used as image sensing or extracting devices in devices such as scanners, cameras, copiers, etc.

Regarding claims 21-22, the subject matter of these claims have been discussed in the rejection of claims 12, 19 and 20, therefore these claims have been similarly analyzed and rejected as per claims 12 and 20.

Allowable Subject Matter

Reasons of Allowance:

9. Claims 1, 28-33 and 2-11 are allowed.

The following is an examiner's statement of reasons of allowance:

Both the instant invention and the closest prior art Ishizuka, U.S. Patent No. 5,262,873, are directed to a method which reduces a memory requirement for scanning the correction documents. The instant invention further recites the limitation "setting the most significant bit of the second (white) correction digital signal to a value of one" in claims 1, 28 and 33, which is not taught by the prior art of record. Therefore claims 1, 28 and 33 are allowed. All other claims depending on claims 1, 28 and 33 are allowable at least by dependency on claims 1, 28 and 33. Claims 23-27 would be allowable for the same reasons as applied to claims 1, 28 and 33, after the 35 USC 112 rejections have been resolved.

10. Claims 13-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 13-14 would be allowable for the same reasons as applied to claims 1, 28 and 33.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manav Seth whose telephone number is (571) 272-7456. The examiner can normally be reached on Monday to Friday from 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Manav Seth
Art Unit 2624
November 5, 2007